

UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF ARTS

SECOND YEAR EXAMINATION IN ARTS (ONLINE), SEMESTER I - 2019/2020

GYG 2129 – LOCATIONAL ANALYSIS

OPEN BOOK EXAMINATION

Instructions to Students:

- The question paper starts on page 2
- All written assessments must be **handwritten**. Handwriting must be **clear and readable**.
- Answers should be written on an **A4 size paper** (ruled/lined paper/or otherwise), using a **black ball point pen**.
- As in the case of an in-person examination, word processing or type setting of answers will not be permitted. This rule does not apply to any candidate who has been exempted by the University under applicable bylaws (e.g., due to visual impairment).
- The **index number must be written on the top right-hand side** of each page of the answer script. Do not write your name anywhere on the answer script.
- **Number the pages** of the answer script using the following format at the **bottom of the page**: E.g., if it consists of 5 pages 1/5, 2/5...etc.
- Use the **common front page** (provided on LMS) as the first page of the answer script. You may print, or hand write the front page which must be the first page of your assessment.
- The **total number of pages** should be indicated on the front page of the answer script.
- **Scan/take photos of the answer script and convert it to a single PDF file** in the order of the page numbers.
- The full page of the answer script must be properly covered in the scanned image, and the scanned image must be clear/readable.
- LMS does not permit individual pages to be uploaded separately.
- **The only acceptable file format is PDF. The PDF file should be named with your index number**, e.g. A 12345
- Uploading answer scripts as JPEG/JPG or any other form will not be permitted.
- Complete and upload the final version of the answer script to LMS **within the stipulated 24 hours**.
- Once the answer script has been uploaded to LMS, take **a screen shot of the full page** of the LMS with the word 'submitted', as an acknowledgement and keep with you.
- **If** there is an **unexpected technical issue** with the uploading of an answer script to LMS, you may send your answer script via email to exam2@arts.cmb.ac.lk within the stipulated 24-hour period.

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Duration: **24 hours** for completion and submission of answer scripts to LMS.

Answer **03** questions selecting at least one question from each part.

Use of calculator is allowed.

Part I

01. (A) Explain the importance of Absolute and Relative locations for the following instances using appropriate diagrams (Maximum of 300 words for each answer)

- I. COVID-19 infected people, their homes and the work places.
- II. Delivery of goods from shops and customers' homes.
- III. Crown area of landslides and the flow direction.

(02 Marks * 3 = 06)

(B). Briefly discuss the importance of both spatial and aspatial (non spatial) data in studying drinking water quality of dug wells of an area. (Maximum of 300 words for the answer)

(02 Marks)

(C). Briefly discuss the interrelationship of observation units, variables and data, using examples (Maximum of 400 words for the answer)

(03 Marks)

(D) Following three figures depict the results of three studies. Answer the questions given below: using the provided figures.

I. Explain the distribution of fish species in the Negombo lagoon using the information provided in Figure Number 1.

(Maximum of 300 words for the answer)

(02 Marks)

II. Explain the soil texture pattern in Figure Number 2. (Maximum of 400 words for the answer)

(03 Marks)

III. Briefly compare the differences in mangrove species distribution using the information provided in Figure Number 3a and Figure Number 3b

(Maximum of 500 words for the answer)

(04 Marks)

Figure Number 1: Fish species identified from Natural, Artificial and Semi-natural habitats of Negombo lagoon

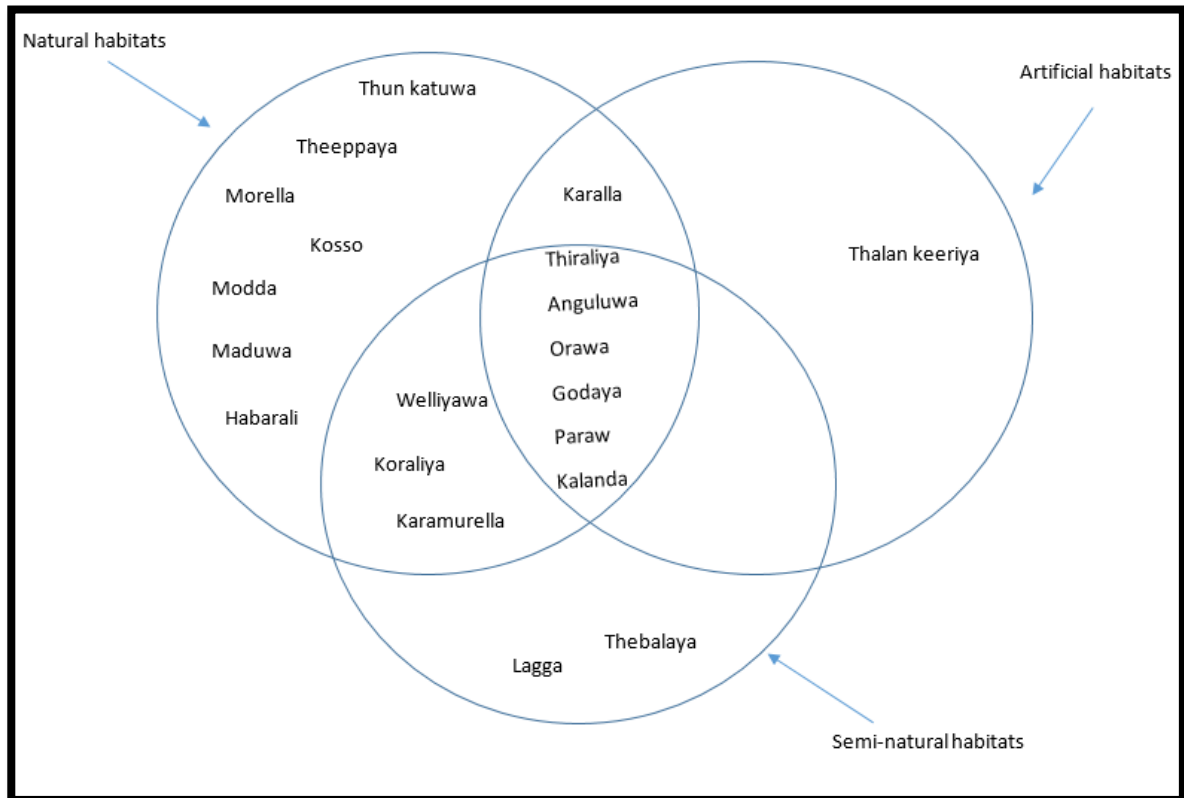
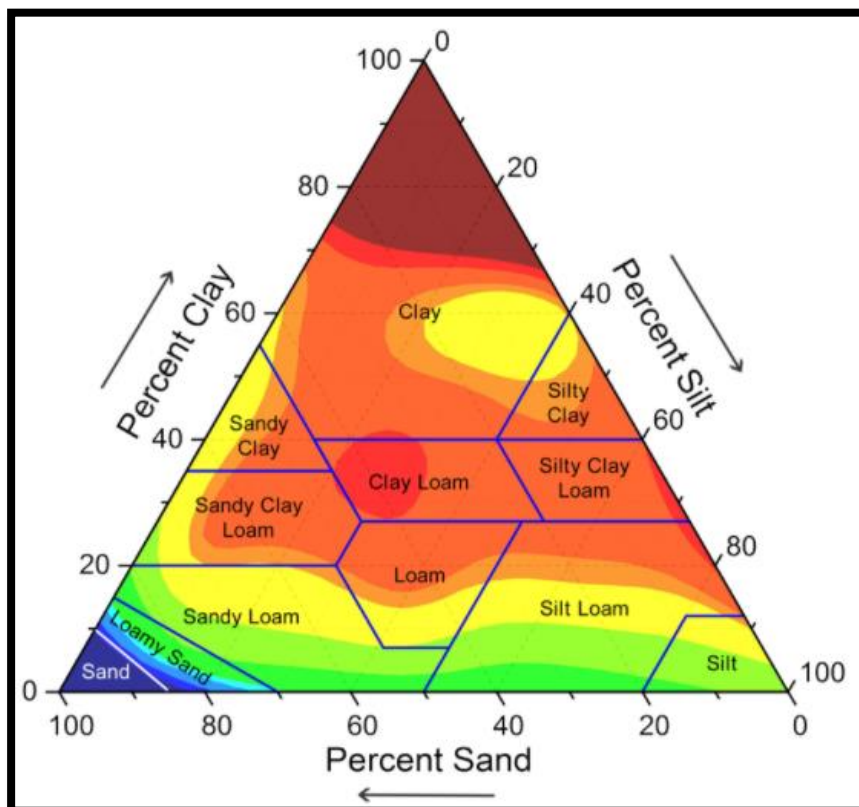


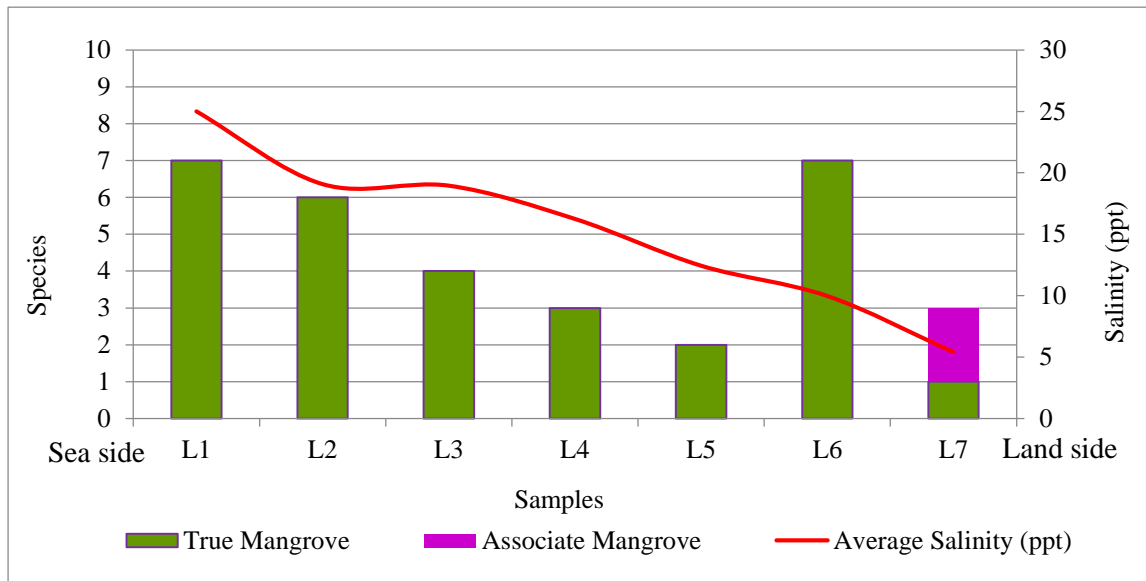
Figure Number 2: Soil textural pattern and the percentage of clay, silt, and sand.



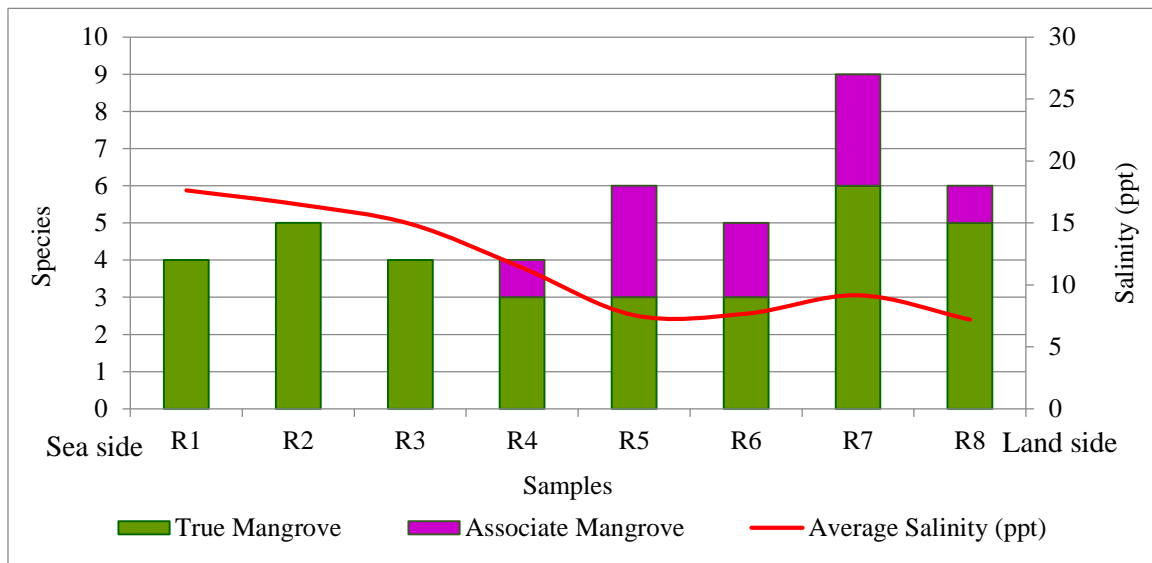
Source: <https://support.rainmachine.com/>

Figure Number 3: Distribution of different mangrove species according to the salinity gradient of the Negombo lagoon

a) Right bank



b) Left bank



Part II

02. “Locational Analysis solves locational problems in human geography”. Do you agree with this statement? Discuss your answer using appropriate examples (Maximum of 1000 words for the answer)

(20 Marks)

03. “Locational analysis contributes to the development of techniques of observations, analysis of geographic data, and their display”. Examine this statement. (Maximum of 1000 words for the answer)

(20 Marks)

Part III

04. I. Evaluate the similarities and dissimilarities between classifications and grouping techniques. (Maximum of 600 words for the answer)

(06 Marks)

II. Table Number 1 provides population data in twenty selected Grama Niladhari (GN) Divisions in the Kaduwela Divisional Secretariat (DS) division of Sri Lanka. Group the observation units using Equal interval method, Geometric proportion method and Equal number of observation method. Determine number of classes using the following equation

$$K = 1 + 3.3 \log n$$

(08 Marks)

III. Discuss your results of 4. II above, and examine the suitability of above grouping techniques in grouping the data provided in Table-1. (Maximum of 800 words for the answer)

(06 Marks)

Table Number 1: Population data of 20 selected Grama Niladhari divisions in Kaduwela Divisional Secretariat division.

Serial Number	Grama Niladhari Division	Population
01	Embilladeniya	1952
02	Batewela	1991
03	Dadigamuwa	2190
04	Aruppitiya	2449
05	Awerihena	2713
06	Welipillawa	2729
07	Nawagamuwa south	2987
08	Wakewatta	4020
09	Raggahawatta	4193
10	Hewagama	4334
11	Pahala Bomiriya-A	4395
12	Ihala Bomiriya	4434
13	Kaduwela	4518
14	Ranala	5038
15	Pahala Bomiriya-B	5076
16	Mahadeniya	5718
17	Nawagamuwa	5754
18	Malabe East	6199
19	Kothalawala	6338
20	Potharawa	7723

Source: Population statistics of Kaduwela Divisional Secretariat Division

5. I. Explain the importance of selecting an appropriate classification method considering the scales of measurements of data in order to derive a meaningful result. (Maximum of 600 words for the answer)

(06 Marks)

II Based on the data related to bird richness and diversity provided in the Table Number 2, and using a suitable classification method adopted for representing bird richness and diversity, classify the bird richness and diversity. Consider the morning and evening periods separately, for your classification.

(08 Marks)

Table Number 2: Town areas, richness of birds and their diversity in the morning and evening

Location	Morning		Evening	
	Richness	Diversity	Richness	Diversity
1.Kottawa	3	0.5726	2	0.6834
2.Rukalgama	10	2.0667	10	1.9985
3.Talawathugoda	4	0.5510	4	0.6328
4.Maharagama	3	0.3984	2	0.2338
5.Wijerama	6	1.7479	4	1.2770
6.Depanama	7	1.7327	8	1.9722
7.Malapalla	5	1.3269	7	1.6800
8.Makumbra	6	1.6770	3	0.9369
9.Pannipitiya	7	1.7327	6	1.5194
10.Nawinna	4	0.5187	5	0.5374

Source: Lakpura, 2019

III. Explain your results derived in above 5.II considering the morning and evening bird richness and diversity differences. Briefly discuss to what extent the above 5.II classification covers the major characteristics of an accepted classification (Maximum of 800 words for the answer).

(06 Marks)
